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That which is claimed is:

 A method of stimulating the growth of lung alveolar surface in a lung in need thereof, comprising:

providing progenitor or stem cells capable of regenerating lung alveolar 5 surface: and

administering said progenitor or stem cells to said lung in an amount sufficient to stimulate the growth of lung alveolar surface therein.

- A method according to claim 1, wherein said lung is *in vivo* in a subject in need of said treatment.
- 3. A method according to claim 1, wherein said lung is ex vivo, and wherein said administering step is followed by the step of:

transplanting said ung into a recipient in need thereof.

- 4. A method according to claim 1, wherein said subject is a mammalian subject.
 - 5. A method according to claim wherein said subject is a human subject.
- A method according to claim 1, wherein said step or progenitor cells are from the same species as said subject.
- 7. A method according to claim 1, wherein said progenitor cells are 25 autologous cells.
 - 8. A method according to claim 1, wherein said administering step is carried out by intravenous injection, intra-arterial injection, or intra-bronchial administration.
- 9. A method according to claim 1, wherein said stem or progenitor cells are lung cells.

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No. A method according to claim 1, wherein said stem or progenitor cells are bone marrow cells.

- A method according to claim 1, wherein said stem or progenitor cells are embryonic stem cells.
 - 12. A method according to claim 11, wherein said embryonic stem cells contain a cell nucleus that is autologous to said subject.

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